Dr. Sarton has also announced in *Science* that "instead of publishing in four languages an effort will be made to use only French and English—chiefly, and perhaps exclusively, the latter. Articles written in other languages will be translated into English. The new *Isis* will only publish shorter articles. The longer and more monographic ones would be included in *Studies in the History and Method of Science* by Dr. Charles Singer of Exeter College, Oxford." The first volume of this work was issued by the Oxford University Press in 1917 and the second volume is now ready for the press. Dr. Singer is to share with Dr. Sarton the editorial responsibilities of the third and succeeding volumes of *Isis*. "Thus *Isis* and the *Studies* would be supplementary one to the other, and between them would provide suitable outlet for new work on the history and philosophy of science."

We list elsewhere a sketch of PETER LUDWIG MEJDELL SYLOW who died September 7, 1918, in the 86th year of his age. He had been professor of mathematics at the University of Christiania since 1898. Seven of his papers published before 1873 are listed in the *Royal Society Catalogue* and yet others in Poggendorff's *Biographisch-Literarisches Handwörterbuch*. Extensive biographical and bibliographical details are to be found in *Norsk Forfatter-Lexikon 1814–1880* of J. B. Halvorsen, volume 5 (Kristiania, 1901, pages 621–623). Sylow was co-editor of Abel's works and a member of the editorial committee of *Acta Mathematica*. A portrait and some biographical notes may be found in *Acta Mathematica 1882–1912. Table générale des tomes 1–35* (Upsala & Stockholm, 1913). The setting of some of his discoveries is indicated by H. F. BLICHFELDT in his *Finite Collineation Groups* (Chicago, 1917).

One of these discoveries is "Sylow's Theorem": "If p^α is the highest power of a prime p which divides the order of a group G, the sub-groups of G of order p^α form a single conjugate set and their number is congruent to unity, mod p."[1] The practical application of this theorem in determining the possible number of Sylow sub-groups of a given group requires considerable numerical computation before even tentative results can be obtained. This led to the publication by the Carnegie Institution of Washington, in 1916, of *A Sylow Factor Table of the First Twelve Thousand Numbers giving the possible number of Sylow sub-groups of a group of given order between the limits of 0 and 12,000*, by HENRY W. STAGER.

ARTICLES IN CURRENT PERIODICALS.

THE ALUMNI REGISTER, University of Pennsylvania, volume 21, no. 2, December, 1918: "Henry Brown Evans, M.E., Ph.D.," by H. P. Fry, 119–121.[2] [Mathematician and astronomer, appointed in 1918 dean of the Towne Scientific School.]

ANNALS OF MATHEMATICS, volume 20 (2), no. 1, September, 1918: "Functions of limited variation and Lebesgue integrals" by Goldie P. Horton, 1–8; "On the Teixeira construction of the unicursal cubic" by N. Altshiller, 9–12; "The functional equation $f[f(x)] = g(x)$" by G. A. Pfeiffer, 13–22; "The existence of the functions of the elliptic cylinder" by Mary F. Curtis, 23–34;

[1] Sylow, "Théorèmes sur les groupes de substitutions," *Mathematische Annalen*, vol. 5, 1872, pp. 584–594. For the particular statement of the theorem used above Stager refers to Burnside, *The theory of groups of finite order*, 2. ed., Cambridge, 1911, §§ 120 *et seq.*

[2] Unless stated to the contrary such numbers refer to pages.

"The gamma function in the integral calculus" by T. H. Gronwall, 35–76—No. 2, December: "The gamma function in the integral calculus" (concluded), 77–124; "Invariants which are functions of parameters of the transformation" by O. E. Glenn, 125–135; "A theorem on exhaustible sets connected with developments of positive real numbers" by H. Blumberg, 136–141; "Solution of the differential equation $dx^2 + dy^2 + dz^2 = ds^2$ and its application to some geometrical problems" by A. Pell, 142–148; "A general method of summation of divergent series" by L. L. Smail, 149–154.

BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY, volume 25, no. 3, December, 1918: "General aspects of the theory of summable series" by R. D. Carmichael, 97–131; "On the problem of the resistance integral" by T. Hayashi, 131–132; "Note on editions of von Staudt's Geometrie der Lage" by R. C. Archibald, 132–134; "Mathematical Periodicals" [Review of Union List of Mathematical Periodicals by D. E. Smith and Caroline E. Seely] by R. C. Archibald, 134–137.

THE JOURNAL OF THE INDIAN MATHEMATICAL SOCIETY, volume 10, no. 5, October, 1918: "A note in combinatory analysis" by R. Vythynathaswamy, 414–418; "Extension of M'Cay's theorem" by S. Narayanan, 419–422; "Euclid's Book on Divisions of Figures" [Review of R. C. Archibald's book], 423–428; "Note on Legendre's relation in elliptic functions" by K. B. Madhava, 429–430.

THE MATHEMATICS TEACHER, volume 11, no. 1, September, 1918: "The New York state regents syllabus in intermediate algebra" by F. F. Decker, 1–8; "A geometric representation" (concluded) by E. D. Roe, 9–25; "The Reconstruction of the mathematical requirement" by G. W. Evans, 26–33; "A geometric illustration of limits" by C. E. Stromquist, 34–35; "Character-building content of arithmetic" by J. L. Green, 36–41—No. 2, December: "Why students fail in mathematics" by Helen A. Merrill, 45–56; "A solution of equations by standard curves" by R. C. Colwell, 57–60; "War problems in mathematics" by W. E. Breckenridge, 61–79; "Arithmetical errors made by high school pupils" by J. H. Minnick, 80–89; "Some relations connecting the sums of the coaxial minors of a circulant" by W. H. Metzler, 90–93; "Canada's challenge: In Flanders Field" by J. D. McCrae, 94; "America's Answer" by R. W. Lillard, 95.

MESSENGER OF MATHEMATICS, volume 48, no. 1, May, 1918: "The problem of the square pyramid" by G. N. Watson, 1–16.

THE MONIST, volume 28, October, 1918: "Leibnitz and Pascal" by K. I. Gerhardt with critical notes and a summary by J. M. Child and translations of Leibnitz's manuscripts alluded to by Gerhardt, 530–566; "The genesis of an electromagnetic field" by H. Bateman, 586–596; "Galileo and Newton" by P. E. B. Jourdain, 629–633.

NATURE, volume 102, November 7, 1918: "Prof. Olaus Henrici, F.R.S." by M. J. M. Hill, 189–190—November 28: Review of R. C. Tolman's *The Theory of the Relativity of Motion* (Berkeley, 1917), 242–243—December 19: Review by S. Brodetsky of P. Frost's *An Elementary Treatise on Curve Tracing* (Fourth edition revised by R. J. T. Bell, London, Macmillan, 1918), 303–304.

THE NINETEENTH CENTURY AND AFTER, volume 84, November, 1918: "On teaching mathematics" by Mrs. K. Lucas, 942–958.

NYT TIDSSKRIFT FOR MATEMATIK, Copenhagen, volume 29, 1918, no. 1, June, *A*: En Sætning om Trekantens Røringscirkler" by J. Hjelmslev, 1–4; "Adgangseksamen til polyteknisk Læreanstalt, 1917" 5–8; "Landbohøjskolens Eksamensopgaver i Matematik, 1917" 8–10; "Studentexamen, 1917" 11–13; "Realskolexamen" 13–14. *B*: "Une formule exacte pour la détermination du nombre des nombres premiers au-dessous de x qui appartiennent à une classe de nombres donnée" by V. Brun, 1–8; "Über Mengen, die Elemente ihrer selbst sind" by H. Eklund, 8–28—No. 2, October, *A*: "En ny metod att diskutera den allmänna andragrads ekvationen med två variabler under förutsättning av snedvinkliga koordinataxlar" by G. Forsström, 25–39; "Ludwig Sylow, 1832–1918" 46–48. *B*: "Studier over en Afhandling af Gauss" by J. L. W. V. Jensen, 29–36; "Ueber uneigentliche Redeweisen in der Mengenlehre und über einen Aufsatz des Herrn H. Eklund" by T. Brodén, 36–43; "Skoleembedseksamen, Januar 1918," 43–50.

PROCEEDINGS OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES, volume 53, no. 5, March, 1918: "The dyadics which occur in a point space of three dimensions" by C. L. E. Moore and H. B. Phillips, 387–438—No. 8, July: "Rotations in hyperspace" by C. L. E. Moore, 649–694—No. 10, September: "Benjamin Osgood Peirce (1854–1914)" by E. H. Hall, 850–854.

PROCEEDINGS OF THE EDINBURGH MATHEMATICAL SOCIETY, volume 36, part 1 (issued June, 1918): (1) "On the plane representation of the homaloidal surfaces which have a twisted cubic as multiple curve," 2–16, (2) "On a group of transformations connected with the 27 lines

of the non-singular cubic surface" by J. F. Tinto, 17–21; "Nicole's contribution to the foundations of the calculus of finite differences" by C. Tweedie, 22–39; "On a difference equation due to Stirling" by E. Pairman, 40–60—Part 2 (issued November): "The Brocard and Tucker circles of a quadrilateral" by F. G. W. Brown, 61–83; "The apolar locus of two tetrads of points on a conic" by W. P. Milne, 84–90; "Quaternion note on the theory of confocals" by C. G. Knott, 91–93; "An approximate value for the length of an arc of a suspended rope" by E. M. Horsburgh, 94–95; "Rolling loads: a new graphical method" by R. F. Muirhead, 96–102; "A formula for the solution of algebraic or transcendental equations" by E. T. Whittaker, 103–106; "On determinants whose elements are determinants" by E. T. Whittaker, 107–115.

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE U. S. OF A., volume 4, 1918, no. 8, August: "Arithmetical Theory of certain Hurwitzian continued fractions" by D. N. Lehmer, 214–218; "On closed curves described by a spherical pendulum" by A. Emch, 218–221—No. 9, September: "On the α-holomorphisms of a group" by G. A. Miller, 293–294—No. 10, October: "Invariants and canonical forms" by E. J. Wilczynski, 300–305—No. 11, November: "On certain projective generalizations of metric theorems, and the curves of Darboux and Segre" by G. M. Green—No. 12, December: "On Jacobi's Extension of the continued fraction algorithm" by D. N. Lehmer, 360–364—Volume 5, no. 1, January, 1919: "A theorem on power series with an application to conformal mapping" by T. H. Gronwall, 22–24.

REVISTA DE MATEMATICAS, Buenos Aires, volume 2, no. 6, January–February, 1918: "La ecuación de las trayectorias ortogonales de las superficies equipotenciales newtonianas correspondientes a dos o más centros alineados y la construcción de las mismas" by B. I. Baidaff, 161–164; "Cuestiones de matemáticas elementales; relacionadas con la teoria de los grupos y con los principios del cálculo diferencial" (continued) by J. Duclout, 164–171; "Ejemplos de integración inmediata" (continued) by E. Rebuelto, 172–175; notas, bibliografia, problemas, ejercicios, tabla de las materias, 176–192.

SCIENCE, volume 48 (2), November 29, 1918: "Maxime Bôcher" [Minute on his life and services placed upon the records of the faculty of arts and sciences, Harvard University, at the meeting of October 22, 1918], 534–535—December 6: "Means for the scientific development of mathematics teachers" by G. A. Miller, 553–560; "A Greek tract on indivisible lines" by F. Cajori, 577–578—December 20: Reviews by C. L. Poor of Arrhenius's *The Destinies of the Stars* and of Hastings's *Modern Navigation*, 621–622—December 27: "International organization of Science" by G. A. Miller, 649–650—Volume 49, January 10, 1919: "Foundations of mechanics" by P. J. Fox, 44—February 14: "Edward Charles Pickering" by H. N. Russell, 151–155; "The publication of Isis" by G. Sarton, 170–171. [Quotations from Miller's article of December 6: ". . . I believe that if a man would secure a thorough knowledge of certain nine mathematical books beyond a first course in elementary calculus he would be much better informed than the average candidate for the Ph.D. degree. . . . The nine mathematical books whose mastery, together with a fair amount of general mathematical reading, and a development of some of the thoughts contained in these books, would make us an ornament unto our profession could be selected with considerable latitude. As one such selection the following may be noted: WEBER, *Lehrbuch der Algebra*, 3 volumes; GOURSAT, *Cours d'analyse mathématique*, 3 volumes; VEBLEN and YOUNG, *Projective Geometry*, 2 volumes—the second by Veblen alone; EISENHART, *Differential Geometry*, one volume. Those who do not read German might substitute for the three volumes of Weber's algebra the following: BÔCHER, *Introduction to Higher Algebra*; MILLER, BLICHFELDT, and DICKSON, *Finite Groups*; REID, *Theory of Algebraic Numbers*."]

THE TEXAS MATHEMATICS TEACHERS' BULLETIN, volume 4, no. 1, November, 1918: "Some observations on course of study, and mathematics in particular" by J. M. Bledsoe, 6–22; "A mathematical soothsayer" by P. M. Batchelder, 23–24; "Orientation for heavy (coast) artillery" by E. J. Oglesby, 25–29; "Progressive teaching of mathematics" (from *School Science and Mathematics*, May, 1918) by G. W. Myers, 30–40; "The straight edge," 41.

THE TÔHOKU MATHEMATICAL JOURNAL, volume 13, no. 4, June, 1918: "On irreducible equations admitting roots of the form $a + \rho e^{i\theta}$, a and ρ both rational" by A. Kempner, 253–265; "Note on Dr. Muir's paper on 'A Theorem including Cayley's on zero-axial skew determinants of even order'" by W. H. Metzler, 266–268; "Sur une propriété de la courbure de certaines courbes associées au triangle" by R. Goormaghtigh, 269–273; "On the null-system" by Y. Okada, 274–289; "Binary forms and duality" by K. Ogura, 290–295; "On the algebraic correspondence" by T. Kubota and S. Kakeya, 296–299; "Un Théorème sur les continus" by W. Sierpinski, 300–303; "Repeated solutions of a certain class of linear functional equations" by R. D. Carmichael, 304–

313; "Group-theory proof of two elementary theorems in number theory" by G. A. Miller, 314–315—Volume 14, nos. 1–2, August, 1918; "A determinantal theorem and Clifford's theorem on n lines" by T. Hayashi and K. Shibata, 1–10; "A construction-problem in elementary projective geometry" by T. Hayashi, 11–19; "Ueber die Schwerpunkte der konvexen geschlossenen Kurven und Flächen" by T. Kubota, 20–27; "Theory of the point-line convex (1, 1) in space, I" by K. Ogura, 28–63; "Theorems on convergent integrals" by T. Kojima, 64–79; "On the mean center of points on an algebraic curve" by K. Yanagihara, 80–89; "On the mean center of the contact points of tangent planes to an algebraic surface" by K. Shibata, 90–97; "Ueber die Konstruktionsaufgaben dritten und vierten Grades" by T. Kubota, 104–108; "Bemerkung zur Theorie der Approximation der irrationalen Zahlen durch rationale Zahlen" by M. Fujiwara, 109–115; "The stability of the parachute" by S. Brodetsky, 116–123; "A generalized Pascal theorem on a space cubic" by K. Ogura, 124–126; "On integral inequalities between two systems of orthogonal functions" by K. Ogura, 152–154; "Determination of the central forces acting on a particle whose equations of motion possess an integral quadratic in the velocities" by K. Ogura, 155–160.

TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY, volume 19, no. 4, October, 1918; "Spiral minimal surfaces" by J. K. Whittemore, 315–330; "On the group of isomorphisms of a certain extension of an abelian group" by L. C. Mathewson, 331–340; "Concerning the zeros of the solutions of certain differential equations" by W. B. Fite, 341–352; "Differentiation with respect to a function of limited variation" by P. J. Daniell, 353–362; "Linear integro-differential equations with a boundary condition" by M. F. Fu, 363–407; "On scalar and vector covariants of linear algebras" by Olive C. Hazlett, 408–420.

UNIVERSITY BULLETIN, Louisiana State University, volume 10, new series, no. 8, August, 1918: "An appreciation of James W. Nicholson"[1] by S. T. Sanders, 1–31. [Subheadings are: "A truth lover and truth seeker," "The mathematician," "The teacher," "Typical mathematical product," "Nicholson's method," and "Nicholson the philosopher." Nicholson was president of the university and head of the department of mathematics from 1883 to the time of his death in March, 1917.]

ZEITSCHRIFT FÜR MATHEMATISCHEN UND NATURWISSENSCHAFTLICHEN UNTERRICHT ALLER SCHULGATTUNGEN, volume 49, 1918, Heft 1, January: "Vermessungskunde in Trigonometrieunterricht" by H. Schuhmacher, 1–19 (see also 186)—Heft 2, February: "Eine Ergänzung der Archimedischen Kreismessung" by H. Dörrie, 41–45; "Ueber die Flächenwinkel einer dreiseitigen Ecke" by R. Sturm, 45–46; "Ueber Krümmungen verschiedener Ordnung" by R. Mehmke, 47–49; "Elementare Theorie der ebenen Sonnenuhren nebst einigen speziellen Bemerkungen zur Gnomonik der Araber"49–57; "Die neue preussische Prüfungsordnung für das Lehramt an höheren Schulen" by W. Lietzmann, 58–61—Heft 3, April: "Die Anfänge der analytischen Raumgeometrie" by H. Wieleitner, 73–79; "Elementargeometrische Behandlung der Dupinschen Zyklide" by K. Kommerell, 79–95—Doppel-Heft 4–5, June 13: "Ueber harmonische Kegelschnitte" by H. Pfaff, 113–127; "Ueber Rechenmaschinen und Rechenunterricht (ein Beitrag zu einer Reform der Methodik und Schematik auf kinematischer Grundlage)," 127–139; "Ergänzende Zusätze zu der Arbeit von Herrn Haentzschel 'Eine von Newton gestellte Aufgabe über Sehnenvierecke' (46. Jahrgang, S. 190–194, 1915)" by E. Lampe, 139–144; "Bemerkung zu den vorstehenden 'Zusätzen'" by E. Haentzschel, 144–145; "Das Stellenwertsystem bei den Maya und bei den Indern" by H. Wieleitner; "Berechnung rechtwinkliger Dreiecke bei den Akkadern um 2000 v. Chr." by W. Lietzmann 148–149—Heft 6, June 20; "Ueber die Rentabilität der auslösbaren Schatzanweisungen der 8. Kriegsanleihe und ihre Ermittlung" by P. Lötzbeyer, 161–164; "Eine für Ellipse und Hyperbel gleichlautende Achsenkonstruktion" by F. Redl, 165–170; "Berechnung der Einmal-Prämie für eine 'unterjährige' Leibrente" by K. Wolletz, 170–174; "Zur stetigen Teilung und zum Fünfeck" by W. Weber, 174–178—Heft 7, July: "Schulnomogramme" by P. Luckey, 193–203; "Ueber den Zusammenhang der Heronischen Inhaltsformel mit einigen Gleichungen der Kegelschnitte" by C. Ibrügger, 204–207; "Tangenssatz, Mollweidesche Formeln, Kosinussatz, acht Additionssätze an einer Figur" by W. Weber, 212–213; "Die Winkelhalbierenden des Sehnenvierecks" by C. Stengel, 213–215.

THE YALE ALUMNI WEEKLY, volume 28, no. 13, December 13, 1918: "Mathematics for freshmen and sophomores, how to make the subject more useful to students in a reorganized curriculum" by E. W. Brown, 310–311.

[1] He was the author of "A simple solution of the Diophantine equation $U^3 = V^3 + X^3 + Y^3$" in this MONTHLY, September, 1915, vol. 22, pp. 224–225.